Analogies

Tutorial

Hartley Courseware, Inc.

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Analogies Tutorial

PURPOSE

This program helps students develop a systematic approach to the solution of analogies. It introduces the student to analogies in a sequential manner that assumes no prior knowledge. Students encounter analogies on some standardized tests and should know how to solve them. Learning about analogies also helps a student learn to approach a problem logically, and to build vocabulary.

All Hartley courseware requires a 48K Apple II/IIe* or Franklin ACE 1000 with one Disk Drive.

When using the apple IIe or Franklin, the CAPS LOCK (Apple IIe), LOCK (Franklin) must be down at all times.

120985

TEACHER'S GUIDE

Pre/post tests are included with this documentation.

Field test site schools available upon request.

RUNNING THE PROGRAM (FOR THE STUDENT)

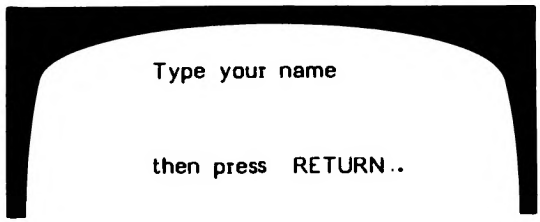
This disk will boot on a 3.3 Disk Operating System.

When running this program on the **APPLE IIe,** or the **Franklin ACE 1000,** you must keep the **CAPS LOCK** key down.

Put the disk in Drive #1; close the door. Turn on your computer. If you are using an Apple II Plus, or Apple IIe, the disk will boot automatically when you turn on the computer.

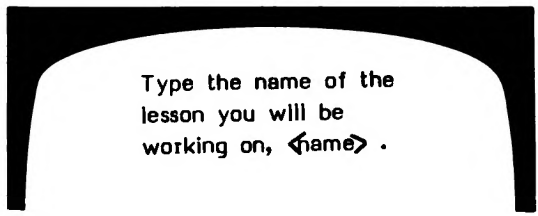
If you have an Apple II - type **PR#6** and press **RETURN.** The program will load into your computer and run automatically - don't type CATALOG!

The credits will vanish and this screen will appear:



To run a lesson, type in your name and press **RETURN.**

The next frame to appear is:



If your teacher has not assigned you a lesson, you may wish to check with him/her before going further. If you are using the disk independently and you don't know which lessons are available on the disk, simply type

? and press **RETURN**

to see a list of the lessons.

This will take you to the 'catalog' which will show you the list of lessons available on the disk. After all lessons on the catalog have been shown, the computer will return to the "Type the name of the lesson you will be working on." frame. At that time you would type in the lesson you have selected. If you are just starting to work with the disk and there is no lesson assignment, start with the first lesson on Disk I, **AN1**.

The first screen in the lesson to appear will be the Instructions. **The instructions frame may be accessed at any time by pressing 'H' and RETURN when a response is called for.**

When asked a question you must type only the letter of the answer. Example:

HOT is to COLD as DRY is to ___.

a. STRONG
b. WET
c. WARM
d. FLUFFY

answer: b

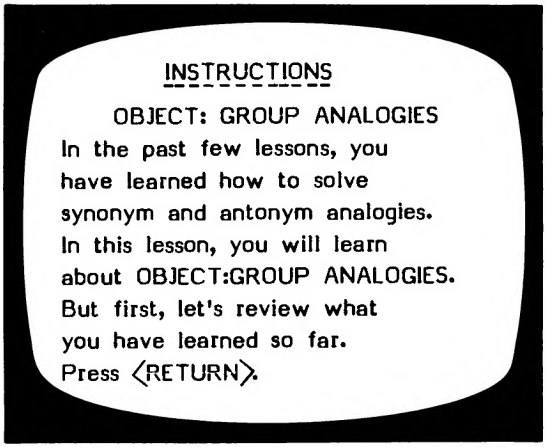
You can stop the program any time a response (answer) is called for by pressing the **ESC** key. Results of what you had attempted to that point will be kept by the computer.

The lessons on this two-disk Analogies Tutorial program are:

DISK I		**DISK II**	
AN1	AN5	AN7	AN10
AN2	AN5A	AN7A	AN10A
AN3	AN6	AN8	
AN3A	AN6A	AN8A	
AN4		AN9	
AN4A		AN9A	

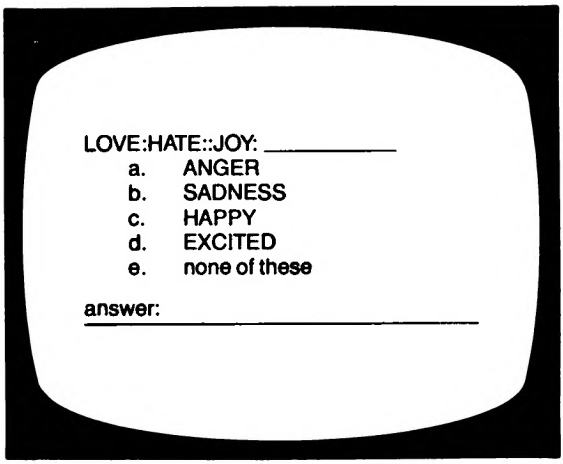
HOW THE PROGRAM IS PRESENTED

After the lesson name (AN1, AN6, etc.) has been entered, the first screen to appear will be the Instructions for that lesson.

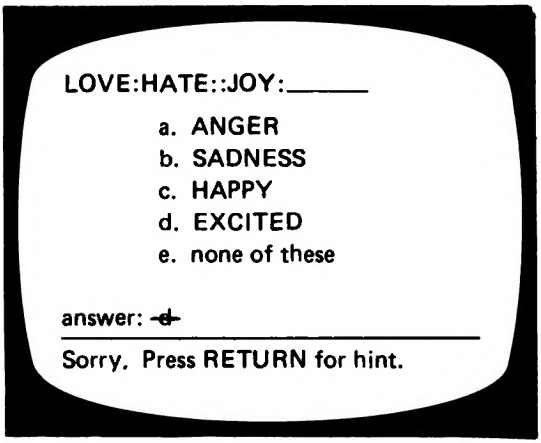


Remember-The instruction frame may be accessed at any time by the student by pressing 'H' (RETURN) when a response is called for. The program will automatically return to the appropriate question frame.

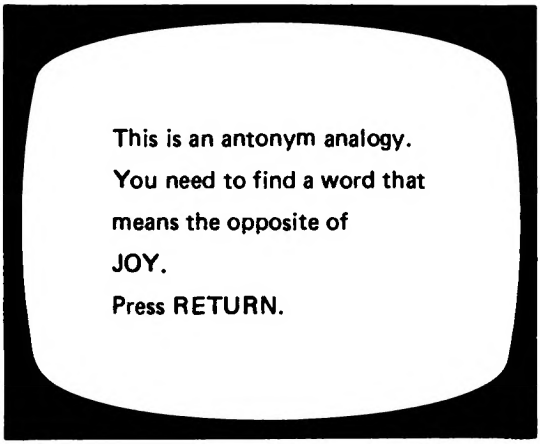
The frames in the lesson will be presented. A typical question frame looks like this.



If answered correctly, the computer will present the next question frame. If incorrect, either a hint frame or an explanation frame may be shown. A hint frame is used to guide the student toward the correct answer.

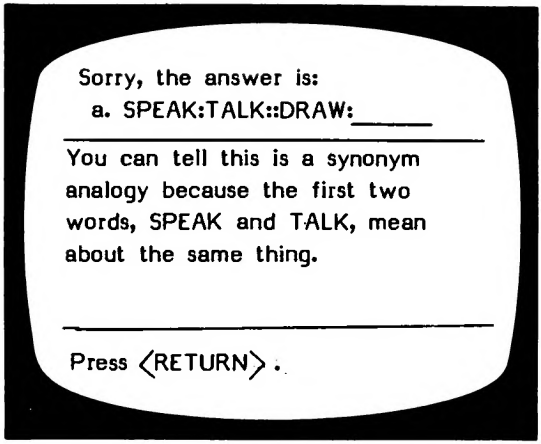


Question Frame



Hint Frame

The computer then returns the student to the frame just missed, for another try. The number of chances a student is given may be set by the teacher in the Design Options. This is accessed via the Teacher's MENU - see page 12.



Explanation Frame

Each question may be followed by either a 'Hint' or an 'Explanation' frame. Which is used depends on the content and preference of the author. These feedback frames may be changed if desired.

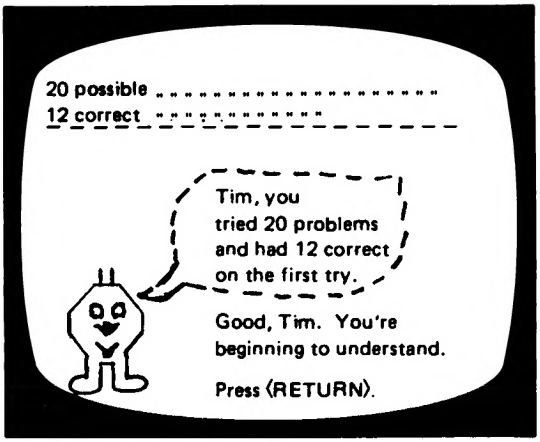
A hint frame is generally used in tutorials to guide the student to the correct answer.

An explanation frame is generally used in a testing sequence or when more than just the answer is needed.

Unless the lesson is stopped by pressing the **ESC** key when a response is called for, all items in the lesson will be presented. All items missed are stored in Student Planning for later review by the teacher.

At the end of the lesson, the student will be shown the following screen indicating the number correct out of the number attempted. A little graphic, "**GORB**", 'tells' the student how well he/she did on the lesson just completed.

Introducing....**GORB!**



The computer will then return you to the "Type your name." frame ready for another student or another lesson.

If the teacher has set the computer to terminate a lesson after a student gets 10* questions correct in a row, the graph above will change slightly when the student achieves this criterion.
Example:

20 possible "
12 correct out of 14 attempts " " " " " " " " " " " " " " " "

GORB will say: "Tim, you tried 14 problems
and had 10 in a row correct."

*This can be any number.

FOR THE TEACHER ONLY

Introduction to Analogies

Analogies are word problems that can be fun for students when done for their own sake. However, students encountr analogies on many standardized tests and should know how to solve them. Working with analogies will also help students learn to approach a problem logically, and will help them to build vocabulary.

Through the use of the lessons in this program, students are taught about analogies in a sequential manner that assumes no prior knowledge. The basic information that is presented to the students is reproduced here for the teacher.

An analogy is a word problem that uses two pairs of words. The words in the first pair are related to each other in a certain way. The second pair of words must be completed so that they relate to each other in the same way as the first pair.

Analogies are written in a structured manner.
Example:

PEAR:FRUIT::SPINACH:VEGETABLE

When reading an analogy, the colon (:) is read 'is to', and the double colon (::) is read 'as'.
Example:

PEAR is to FRUIT as SPINACH is to VEGETABLE

This means that a pear is an object that belongs to the group "fruit" just as spinach belongs to the group "vegetable".

After students become familiar with the form opf analogies, they begin to learn to solve them. The student must choose a word to complete the analogy so that both pairs of words relate to each other in the same way.

Example:

HOT:COLD::DRY:____

a. STRONG
b. WET
c. WARM
d. FLUFFY
e. none of these

In order to solve the analogy, the student must determine that HOT and COLD are opposites, and must then choose a word that is the opposite of DRY.

The analogies used in the lessons have five responses. Only one response completes the analogy correctly. Response "e" is always "none of these". The three remaining responses are called distractors. A response is a distractor when it appears at first glance to be correct. Students must learn to recognize distractors. A distractor may take several forms:

It may rhyme with the last word in the analogy.

It may be a word that is exactly opposite the correct answer.

It may relate to the first pair of words instead of to the second pair.

The types of analogies (with examples) taught in these lessons are:

Synonyms - SHUT:SLAM::TWIST:TURN (AN3,AN3A)

Antonyms - UP:DOWN::IN:OUT (AN4, AN4A)

Object:Group - TRUMPET:HORNS::VIOLIN:STRINGS (AN5,AN5A)
Group:Object - HORNS:TRUMPET::STRINGS:VIOLIN

Part:Whole - WING:BIRD::ARM:PERSON (AN6,AN6A)
Whole:Part - BIRD:WING::PERSON:ARM

Object-Description - APPLE:RED::ELEPHANT:GRAY (AN7,AN7A)

Object:Use - HAMMER:POUND::KNIFE:CUT (AN8,AN8A)

Object:User - TRACTOR:FARMER::HAMMER: CARPENTER

Cause:Effect - RAIN:PUDDLE::SNOW:DRIFT (AN9,AN9A)

Grammar - FAT:FATTER::BIG:BIGGER (AN10,AN10A)

Not all sources on analogies agree on how many types there are, nor do they all call them by the same names. Only eight types of analogies are presented in this program. Regardless of the disagreement, the basic characteristics of analogies is that both pairs of words must relate to each other in the same way.

Although analogies can be taught as a separate skill, they are more effective when incorporated into the language arts program.

As the level of the students' interest and proficiency in solving analogies progresses, they can be challenged to make up their own.

Teaching Strategies

If it is indicated by the pre-test or judged by the teacher that the entire class has had very little experience with analogies, it is best to instruct the class in the language and mechanics of analogies.

The teacher may choose to use the traditional method of instruction, explaining the concept of analogies and how to solve them. Another way is to use your computer screen as a blackboard and work through lessons AN1 and AN2 as a group.

When instructing the whole class, use a television set of large monitor so all students have a clear view of the material. Students may respond orally or they may each write their responses.

Either strategy allows students to interact with the teacher and to ask questions. As a check of the students' readiness, they may start working individually on the two introductory lessons, or they may begin with AN3 if the teacher believes that they are well-grounded in the basic information.

If the level of the students is such that they will be challenged by learning about analogies on their own, they can start with AN1 (Introduction, Part 1) and work through the program.

Student Problems

After a student has begun work on a lesson, use the Student Planning to help you diagnose problem areas. The Student Planning keeps track of specific frames a student misses. If a student consistently misses certain items, you may want to add Hint frames or more practice frames. Use the **Change a Lesson** file to modify any of the frames, add Hint or Explanation frames, or simply add more practice frames. How to use these will all be explained on the following pages.

Branching

This program has not been designed to automatically branch to an easier or more difficult lesson. It is the philosophy of the teachers who designed it that the teacher is better qualified to prescribe the next lesson based on his/her knowledge of the student's needs and the planned classroom activity.

By using the Design Options, the teacher can define the criteria under which the program will branch and alert the teacher that a new prescription is needed.

Pre- and post-tests

A pre- and post-test has been included in your materials. They may be duplicated and used to suit your teaching style and the level of the students with whom you are working. Some suggestions on the use of these tests follow.

Both tests, given in the usual manner (one before instruction and one at its conclusion), provide a way to measure progress.

In cases where most students will be starting with practically no knowledge of analogies, administering the pre-test might cause them unnecessary anxiety and prejudice them against the subject.

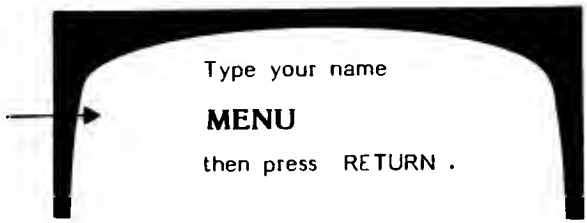
The pre-test may be used as an alternative form of post-test in cases where students did not score well onthe first post-test and were given additional instruction.

The pre-test was not designed for placement in the program, but rather as a gauge of how much students know about analogies. A score of below 80% suggests that the student go through the entire program. A score of 80% or better indicates that the student is ready to work on a more advanced analogies,

Teacher's MENU

The lessons on this disk are for the student. There are also programs for the teacher. These programs allow the teacher to "do things" to the student lessons on the disk.

The teacher's programs are accessed by using the name MENU when the following screen is shown:



The following MENU will be shown:

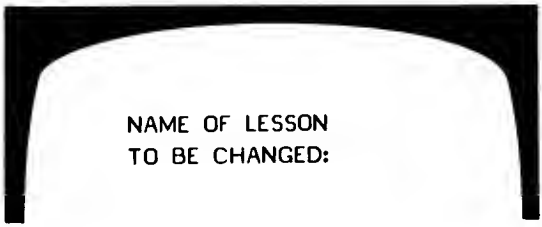
This will tell you how much space is available. One lesson will take 10-20 sectors.

The following pages will describe exactly how to use each of these programs on the Teacher's MENU.

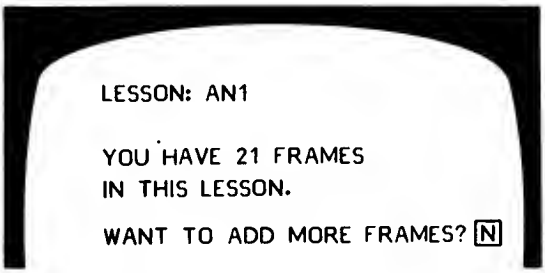
1 - CHANGE A LESSON

If you wish to change a lesson already on the disk, select **1 - Change a Lesson.**

First, you will need to identify the lesson you wish to change or add to.



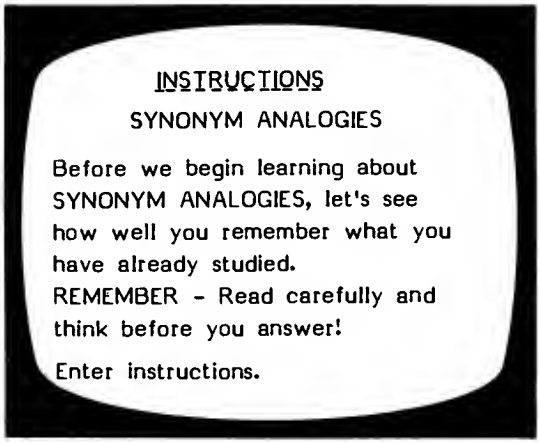
The lesson will be loaded into the computer. You can either add more frames or change existing ones.



Adding Frames

If you want to increase the number of items, type **Y.** You are limited to **30 items per lesson.** You will then be asked:

After indicating the number of frames you wish to add to the lesson, the 'Instructions' frame will be shown with the option of changing it by indicating **Y** or **N.** If you answer **Y,** the cursor will move to the first line of the instructions. An instruction frame may look like this:



This frame may be accessed at anytime by pressing '**H**' when a response is called for.

You may then type new instructions. If you don't wish to change a line, just press **RETURN** to move the cursor to the next line.

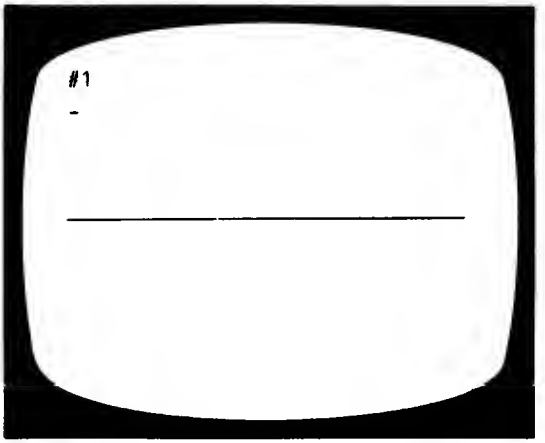
If you are adding frames, you will be shown the frame you wish to add. (If the lesson already had 19 items, Frame #20 will appear blank; the cursor on the first line, ready for you to type in the item.)

To capitalize a letter, press the '^' just before the letter to be capitalized. To make a '__' in a question, use the '**@**' sign.

Frames may be either question frames or information frames. Here is what a blank frame looks like before any words are typed into it.

Question Frame

This may take any format you would like.



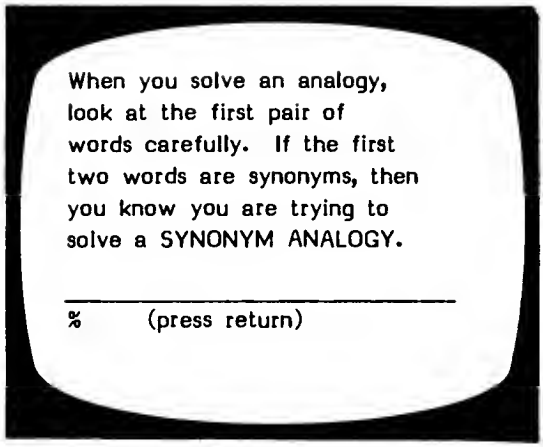
You may enter 6 lines here.

You may enter 4 responses here; any one of these will be considered correct.

Instead of a Question frame, you can enter an 'Information' frame. When an information frame precedes a question, the student can (by use of the ← key), go back to the Information frame for help in answering the question.

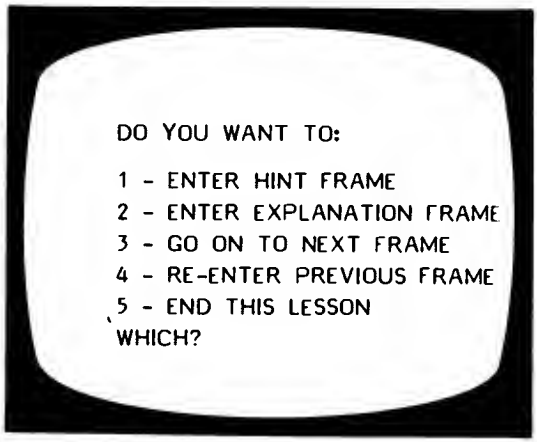
Information Frame
This frame requires no response.

The **%** in the answer's place will indicate to the computer that there will be no answer.



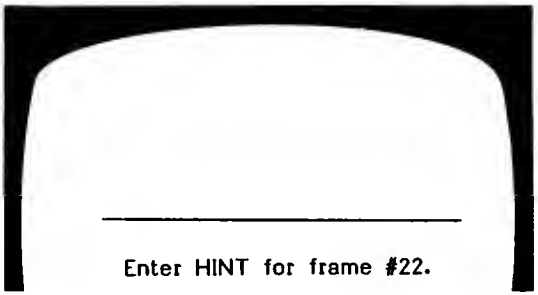
Adding frames (or changing frames)

After entering a new frame, or changing an existing frame, you will then branch to the 'Secondary' MENU.



This allows you to enter a 'Hint' frame or an 'Explanation' Frame. The hint frame will be shown to the student after he misses the question. If you wish to enter a Hint frame for the first question, select **1 - Enter hint frame** and this will appear:

You may enter 6 lines of text.



See pages 30 and 31 for some short-cuts for entering clues. Many commonly used clues, such as "This is an antonym analogy. You need to find a word that means the opposite of _____." have been coded for you. To type this clue, you need only type '*E' (the code) and the last word from the question. Pages 30,31 lists all the codes and the "hints" they produce.

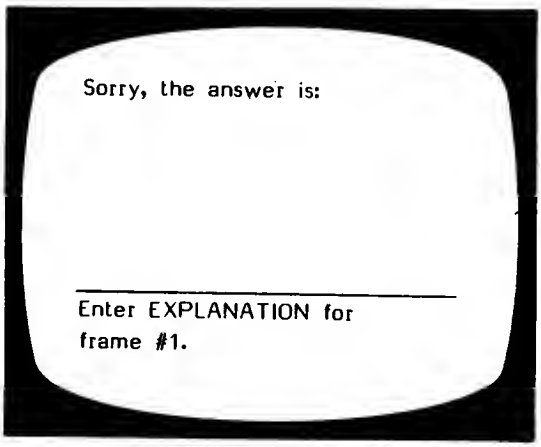
After entering the hint frame, and pressing **RETURN**, the computer will automatically place you at the next frame (assuming you were entering more than one additional frame), ready for the next question or more information.

Select **2 - Enter explanation frame.** This would be used when a hint might not be appropriate, but you want to give the student feedback other than just the answer. The Explanation frame will be shown to the student after he has missed the question on his last try. (The number of tries is set by the teacher at the end of the lesson by using the Design Options).

Answer is shown.

You may enter 6 lines.

You may enter graphics or text.



3 - Go on to next frame. This simply allows you to go to the next consecutive frame without entering a hint or explanation frame for the previous frame.

You may **4 - Re-enter previous frame** if you have given a hint frame and want to look at the question frame you just entered.

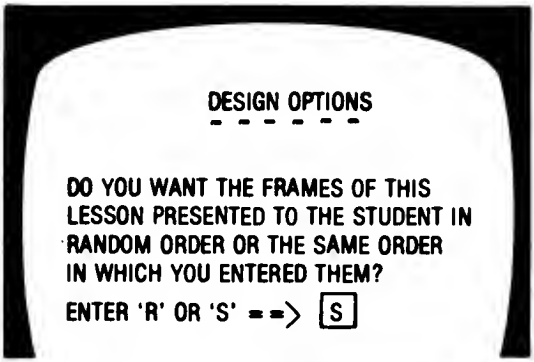
Selecting **5 - End this lesson,** will take you to the **DESIGN OPTIONS** for the lesson you have just entered. The first frame will ask you to enter the concept being taught,i.e.,

CONCEPT:SYNONYM ANALOGIES

Unless you are completely re-writing the lesson, you may want to leave the concept which is already listed. This will be used in the Student Planning section.

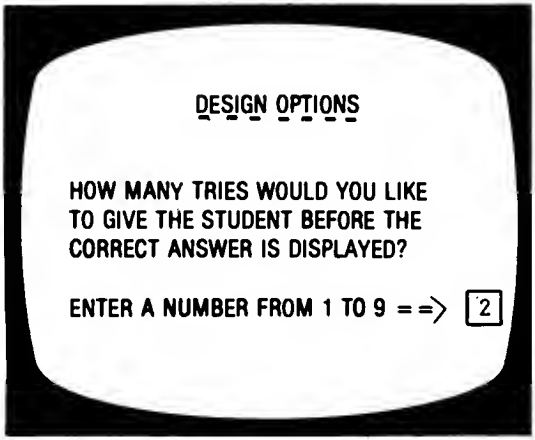
Design Options

The first of the Design Options will be given:

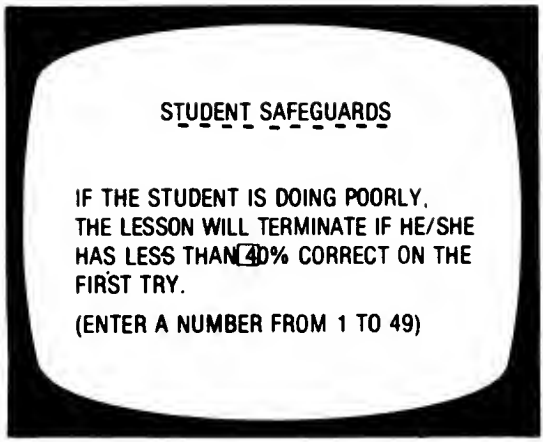


For instructional lessons that are carefully sequenced, you would want them presented in the same order. For drill or tests, you may want random order.

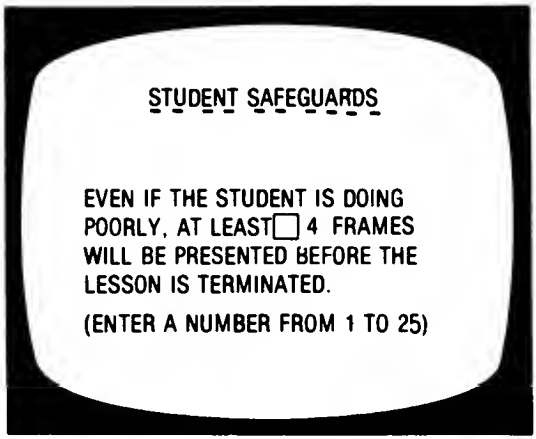
If you are using the hint option, you will need at least 2 tries.



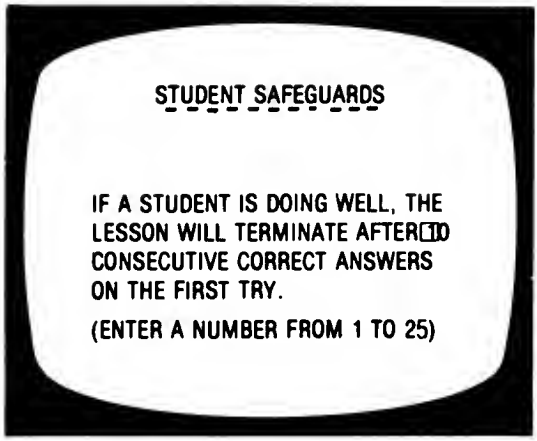
The following 'Student Safeguards' allow you to set the criteria upon which the computer will branch to the end of the lesson. It is the philosophy of the teachers who designed this disk that if a lesson is too easy or too difficult, the computer should terminate the lesson. The TEACHER should make the new prescription.



The next question relates to the above decision.



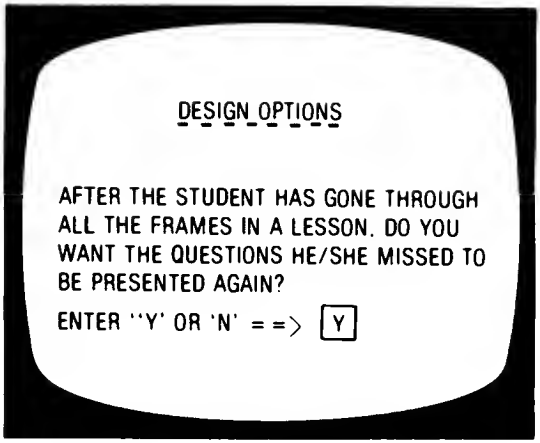
You will need to skip at least some frames. If you don't, the lesson will terminate on the first frame if there is an error (0% will be below any % that you set in the previous step).



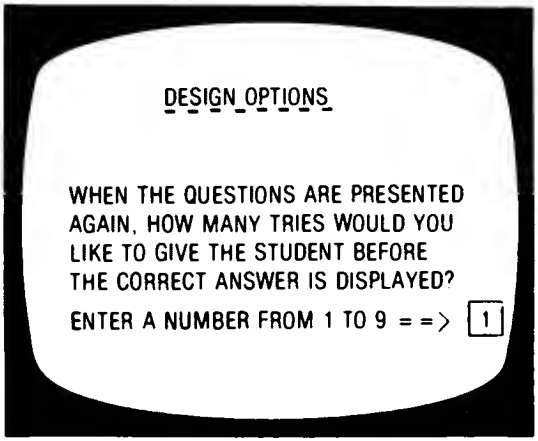
If there is a variety of skills taught or reviewed in one lesson, you may want the student to complete all the work no matter how well he/she does on the first 10. If so, change to 25 or the number of problems in a lesson.

Note: By using the random order option and the Design Options, this disk was designed to allow you to create a modifiable item pool. Rather than drawing a specific number of items, the items will be used until the student meets the criteria you specified (in terms of the number of items in a row correct).

This type of criteria was considered preferable to a % because it takes into account the fact that the child may do poorly in the beginning but learn the concept during the lesson and begin to answer all items correctly.



The student safeguards do not apply to these questions. The authors assumed the teacher would want all missed items reviewed.



After all the Design Options have been set, you will be asked if you want to:

SAVE THIS LESSON? (Y/N)

You will then be returned to the Main MENU.

Changing Frames

If you want to change existing frames, select the **1-Change a lesson** option from the menu.

If you just wish to change some of the frames and not add new items, answer **N** to the question:

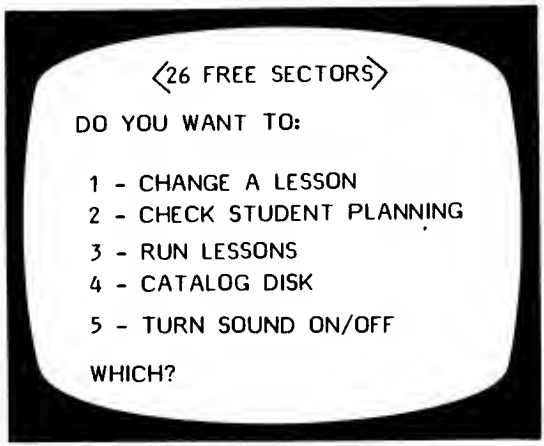
ADD MORE FRAMES? (Y/N)

You will be shown all the frames as they exist. If you wish to change a line, type in the new line. If no change is desired, press **RETURN** to go on to the next line. Use the ← key to back up to the preceding line or frame. Use the → key as a short cut to go from frame to frame.

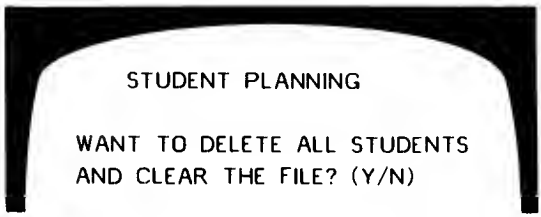
Review pages 16-18 for adding hint or explanation frames. If you do not want to page through all of the frames, type **END** at the beginning of the first line of a question or information frame. This will branch you to the Design Options. (The changes made up to (but not including) this frame will be saved ALONG WITH THE REMAINING UNCHANGED FRAMES.

2 - CHECK STUDENT PLANNING

As a student works through a lesson, the errors that he/she makes are recorded into the Student Planning file. To see this file, bring up the Main MENU:

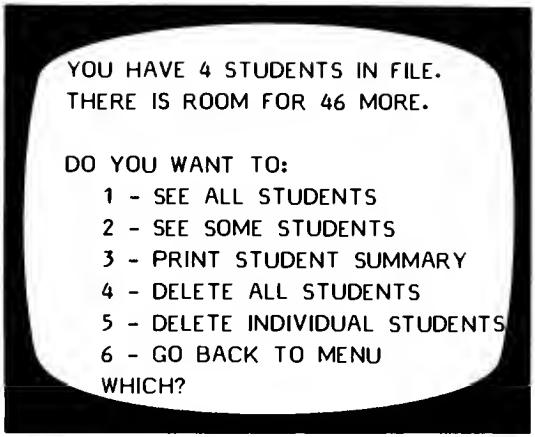


and select **2 - Check Student Planning.** The first frame to appear is:



Type **N** if you want to see the file; **Y** if you want to completely erase all student results. Press **RETURN.**

If you typed **N,** indicating you would like to see the file and not erase it, this frame will appear:



If you choose **1 - SEE ALL STUDENTS,** the computer asks:

ARE YOU USING A PRINTER? (Y/N)

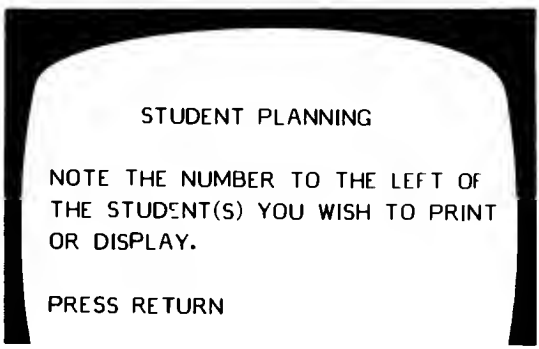
If **Y,** it will ask for the slot. It will usually be **1** or **2.** If you're not sure, take off the cover and check. Your printer card should be located in slot 1 or 2. Then all the records will be printed.

If you are not using a printer, results will be displayed on the screen. Scrolling of results is under control of the teacher.

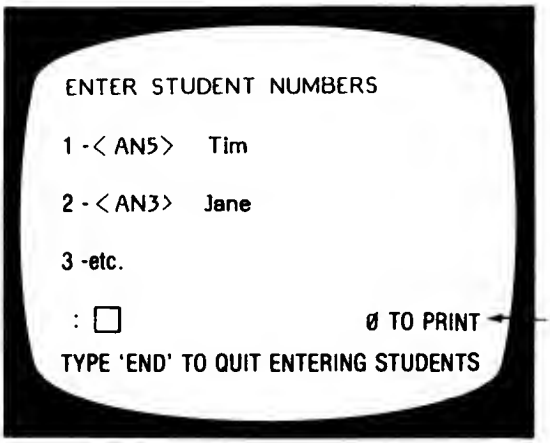
If you want to see only some of the students, select

2 - SEE SOME STUDENTS and press **RETURN.**

This frame appears:



As you select the students whose records you want to view, you will be typing just the number.



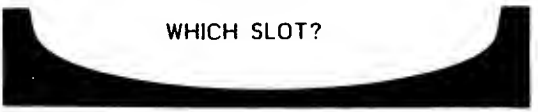
The computer keeps a running tally on the number of students you have selected.

Type the number of a student you want to see and press **RETURN.** For example: If you type **2,** the lesson name and student name will appear at the bottom of the frame This is a check. Press **RETURN** if that is the student you wish to see. This gives you a chance to change your mind and enter **N** if you don't want to see that particular student.

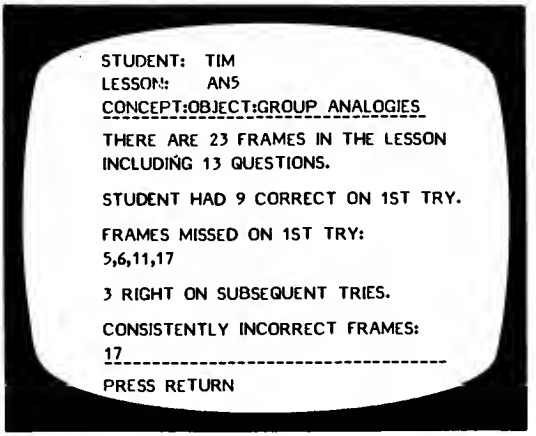
Continue selecting students whose records you want to see. When you have entered all of the students you wish to see, type **END** (in place of another number).

The following frame will appear:

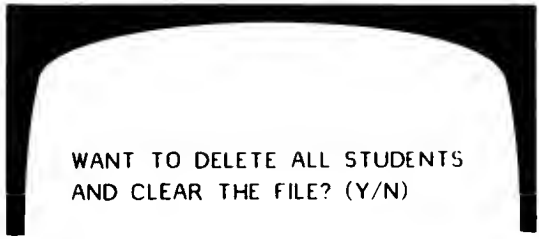
If you type **N**, the records will come up on your monitor. If you type **Y**, you will be asked:



It will usually be **1** or **2**. If you are not sure, take off the cover and check. The printout will be in the following format:



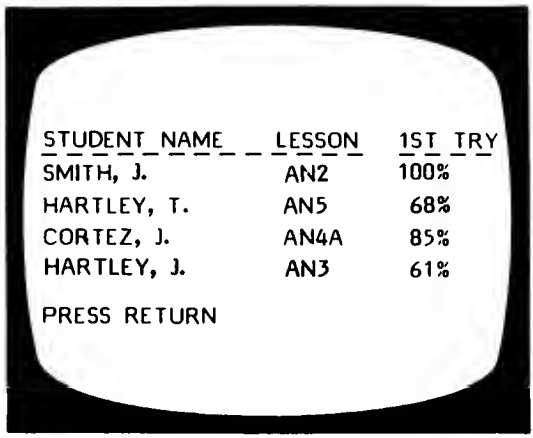
After all information is displayed, you will be asked:



Respond as desired.

The **ESC** key may be pressed at any time to terminate display or printout of student results. A maximum of **50 records** can be stored in this Student Planning file before it must be emptied. To empty the file, answer **Y** to the question at the end of the display/printout, or use option **4** from the Student Planning Menu - **Delete all students.**

3 - PRINT STUDENT SUMMARY from the Student Planning MENU allows you to see or print out a summary of records for the entire class. The summary is in the following format:



The printout of the Student Summary will include more information than you can see on the screen. The printout includes: the skill statement and the number correct/number of questions.

STUDENT NAME	LESSON	1ST TRY	NUMBER CORRECT	SKILL
SMITH, J.	AN2	100%	20/20	PART:WHOLE ANALOGIES

4 - DELETE ALL STUDENTS

If you want to clear all of your records, use this option.

5 - DELETE INDIVIDUAL STUDENTS

A number of teachers have asked for this option. This is most valuable when several teachers are using the same disk. This allows you to print the records of just a few of your students and then erase only those selected records from the file. The procedure is the same as "See some students."

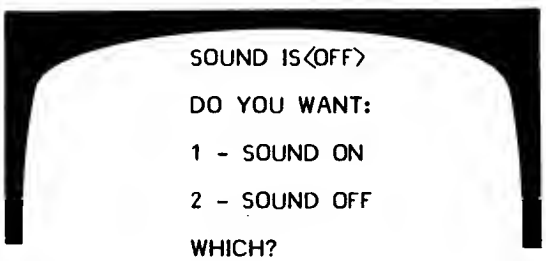
3 - RUN LESSONS

See pages 3-7 for an explanation of how to Run Lessons.

4 - CATALOG DISK

This file holds the list of all lessons on the disk. This can also be accessed by typing a ? when the "Type the name of the lesson you will be working on" appears.

5 - TURN SOUND ON/OFF



After making your selection, you will be returned to the Main MENU.

CODES FOR ENTERING HINTS/EXPLANATIONS.

Type this code to	produce this clue.
*a	The second pair of words must be related to each other in the same way as the first pair of words.
*b	When you read an analogy, ':' stands for 'is to" and '::' stands for 'as'.
*c	To be synonyms, the words must mean the same thing.
*d	This is a synonym analogy. You need to find a word that means about the same as ____
*e	This is an antonym analogy. You need to find a word that means the opposite of ____
*f	This is an object:group analogy. You must find a word that names the group.
*g	This is an object:group analogy. You must find a word that belongs to the group.
*h	This is a part:whole analogy. You need a word to tell what
*j	This is an object:description analogy. You must find a word to describe
*k	This is an object:use analogy. You must find a word to tell

Type this code to	produce this clue.
*l	This is an object:user analogy. You must find a word that names
*m	This is a cause:effect analogy. You must find a word to tell the effect caused by
*n	This is a grammar analogy. You need a word that
*o	To be a synonym analogy, the first two words must mean about the same thing.
*p	To be antonyms, the words must be opposite in meaning.
*q	To be an antonym analogy, the first two words must be opposite in meaning.
*r	To be an object:group analogy, the first two words must name an object and the group to which that object belongs.
*s	In an object:description analogy, one word in the first pair names an object, and the other word describes that object.
*t	In an object:use analogy, one word in the first pair names an object, and the other word tells the use of that object.
*u	In an object:user analogy, one word in the first pair names an object, and the other names a person who uses that object.

Type this code to	produce this clue.
*v	In a part:whole analogy, one of the words in the first pair is a part of the other word.
*w	In a cause:effect analogy, the first word in the pair causes the second to happen.
*x	In a grammar analogy, the first two words are related because of some rule of English language usage.

INSTRUCTIONAL SKILL STATEMENTS

After the first two introductory lessons, each lesson begins with a brief review. A new type of analogy is then introduced. Practice is provided on the new analogy and analogies previously learned.

AN1 Introduction fo the concept of an analogy including what an analogy is and how to read it.

AN2 Introduction to analogies continued. The student learns to define an analogy in terms of word problems which show relationships.

AN3 The student learns to identify word pairs that are synonyms and identify and solve synonym analogies.

AN4 The student will learn to identify antonym word pairs and identify and solve antonym analogies.

AN4A Additional practice in solving synonym and antonym analogies.

AN5 The student will learn to identify object/group word pairs and identify and solve object/group analogies.

AN5A Additional practice in the solution of object/group analogies and analogies previously presented.

AN6 The student will learn to identify and solve part/whole analogies.

AN6A Additional practice on part/whole analogies and all analogies previously presented.

DISK II

AN7 The student will learn to identify and solve object/description analogies.

AN7A The student will learn to identify and solve object/description analogies.

AN8 The student will learn to identify and solve object/use; object;user analogies.

AN8A Additional practice on object/use; object/user analogies and all analogies previously presented.

AN9 The student will learn to identify and solve cause/effect analogies.

AN9A Additional practice on cause/effect analogies and all analogies previously presented.

AN10 The student will learn to identify and solve grammar analogies.

AN10A Additional practice on grammar analogies and all analogies previously presented.

ANSWER KEYS TO PRE/POST TESTS
ANALOGIES TUTORIAL

Pre-Test		Post-Test	
1.	c	1.	c
2.	b	2.	b
3.	d	3.	e
4.	e	4.	b
5.	a	5.	b
6.	b	6.	d
7.	d	7.	a
8.	c	8.	a
9.	e	9.	e
10.	b	10.	d
11.	c	11.	b
12.	a	12.	c
13.	d	13.	e
14.	e	14.	d
15.	c	15.	a
16.	a	16.	d
17.	d	17.	c
18.	d	18.	b
19.	e	19.	e
20.	c	20.	c
21.	b	21.	c
22.	a	22.	a
23.	d	23.	d
24.	b	24.	b
25.	c	25.	c

Analogies Tutorial

Grades 5-8

This two-disk program provides the student with a method of attack for solving analogies.

Practice in identifying and solving analogies is provided. HINTS or EXPLANATIONS are given for incorrect responses.

Type of analogies include—synonym:antonym, object:group, part:whole, object:use, object: user, cause:effect, object:description, and grammatical usage.

Lesson content may be modified to provide a continuous challenge for the student. Individual and class records are kept by the computer.

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H14-11